

Sub B2 -27 A downloading apparatus for a broadcast receiver, comprising:
a receiver which receives a broadcast signal having a video program signal and a control information signal;
a storage element which stores a control program, said control program controlling the operation of a video program corresponding to said video program signal; and
a micro-controller which updates said control program in the storage element based on said control information signal.

28. The apparatus according to claim 27, wherein said broadcast signal includes a packet identifier (PID) to identify a type of information of the broadcast signal.

29. The apparatus according to claim 27, wherein the storage element includes a random access memory (RAM).

30. The apparatus according to claim 27, wherein the storage element includes:
a first domain storing a version number of the control program;
a second domain storing a downloading program; and
a third domain storing the control program.

31. The apparatus according to claim 27, wherein the storage element includes a flash memory.

32. The apparatus according to claim 27, further comprising a signal processor which separates said control information signal from said broadcast signal.

Sub B3 -33 A downloading apparatus for a broadcast receiver, comprising:
a receiver which receives a broadcast signal having a video program signal and a control information signal;
a first storage element which temporarily stores said control information signal representing a new control program;

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Claim

a second storage element which stores a control program controlling the operation of a video program corresponding to said video program signal; and

a controller which replaces the control program in the second storage element with the new control program based on said control information signal.

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34. The apparatus according to claim 33, wherein said broadcast signal includes a packet identifier (PID) to identify said new program to be downloaded.

35. The apparatus according to claim 33, wherein at least one of the first and second storage elements includes a RAM.

36. The apparatus according to claim 33, wherein at least one of the first and second storage elements includes a flash memory.

37. The apparatus according to claim 33, further comprising a third storage element which stores said new program.

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38. A method for downloading a control program from a broadcast signal in a broadcast receiver, comprising:

storing a control program in a first domain of a memory;

storing a predetermined value corresponding to said stored control program in a second domain of the memory;

selecting a name of a control program to be downloaded;

separating a control program corresponding to said selected control program name from a broadcast signal;

replacing said stored control program with said separated control program corresponding to said program name in said first domain of the memory; and

replacing said stored predetermined value with a version number corresponding to said replaced control program in the second domain of the memory.

39. The method according to claim 38, wherein said broadcast signal includes a packet identifier (PID) to identify said name of the control program to be downloaded.

40. The method according to claim 38, wherein the memory includes a RAM.

41. The method according to claim 38, wherein the memory includes a flash memory.

Sub C3 42. A method for downloading a control program from a broadcast signal in a digital broadcast receiver, comprising:
examining a version byte of a memory in which a control program is stored; and
downloading a new control program from a broadcast signal if said examined version byte includes a predetermined value, and processing said control program stored in the memory if said examined version byte does not include the predetermined value.

A 2 43. The method according to claim 42, wherein said downloading includes:
providing a control program name corresponding to the new control program to be downloaded;
deleting the control program stored in the memory;
receiving the new control program which corresponds to said control program name from the broadcast signal;
writing said new control program in the memory; and
writing a version number corresponding said new control program in the memory.

44. The method according to claim 42, wherein the memory includes a flash memory.

45. The method according to claim 43, wherein said control program name includes a packet identifier (PID).

46. The method according to claim 43, wherein the memory includes:
a version byte domain storing said version number; and

a main program domain storing the control program.

Inv D5 47. A method for downloading a control program from a broadcast signal in a broadcast receiver, comprising:

providing a name of a control program to be downloaded;

writing a predetermined value in a first domain of a memory;

deleting a control program which is stored in a second domain of the memory;

downloading a control program corresponding to said program name from a broadcast signal into said second domain of the memory;

replacing said predetermined value with a version number corresponding to said downloaded control program in the first domain of the memory; and

storing the downloaded control program in another memory.

48. The method according to claim 47, further comprising processing the control program which is stored in said another memory, when said downloading is suspended due to an abnormal situation.

49. The method according to claim 47, wherein said broadcast signal includes a packet identifier (PID) representing said control program name.

50. The method according to claim 47, wherein at least one of the memory and said another memory includes a RAM.

51. The method according to claim 47, wherein at least one of the memory and said another memory includes a flash memory.

52. The method according to claim 48, wherein said processing includes recognizing said abnormal situation based on a predetermined value which is stored in the first domain of the memory.--

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